

Information Packet
Watershed Management - Public Works and Utilities
IFS 12-Year Financing

April 16, 2003 Finance Work Group Meeting

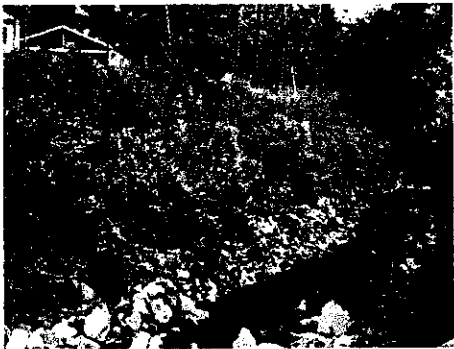
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with annual cost comparison examples

Watershed Master Plan Implementation

Major Project Types



Flood Corridor Preservation. The Southeast Upper Salt Creek Watershed Master Plan projected that if **floodplain storage** were eliminated, flow rates due to urbanization would increase significantly, channel velocities and stream degradation would increase, and downstream flood elevations could increase by 3-5 feet. In addition, the loss of natural floodplain areas would have impacts on water quality. One of the major “project types” for watershed planning is the **purchase of conservation easements** to preserve the floodplain.



Stream Stability Projects. Additional stormwater runoff and increased velocities due to urbanization cause **stream bed and bank degradation** which undermines urban infrastructure and has significant water quality impacts. Another major project type identified in watershed planning is the **construction of “bio-engineered” stream stability measures** which have greater long-term effectiveness for stream stability and environmental sustainability than traditional methods. There are **established tools used to forecast stream degradation** and to project stabilization measures needed.



Water Quality Wetlands. Urban stormwater runoff carries a range of pollutants including sediment, nutrients such as nitrogen and phosphorus, heavy metals, and bacteria. As the City grows, these types of **pollutants increase as a consequence of urbanization**. The City is responsible for water quality under the federal requirements of the Clean Water Act through an NPDES stormwater permit. One of several strategies to address water quality is the **construction of water quality wetlands which remove pollutants** through biological uptake, filtration, and other mechanisms.



Flood Control Projects. These projects include **stormwater storage facilities** such as dams, detention basins, and retention ponds. The construction of stormwater storage facilities upstream will **reduce flood depths downstream**. In the current urban area where existing homes and businesses are at risk and options are limited, flood control projects include such projects as levees, bypass channels, and supplementary hydraulic structures.

Watershed Basin Concept Construction Schedule

<u>Watershed Projects</u>	<u>2 Yrs before Sanitary Const.</u>	<u>1 Yr before Sanitary Const.</u>	<u>Year of Sanitary Const.</u>	<u>1 Yr after Sanitary Const.</u>
Flood Corridor Preservation	Appraisal	ROW		
Stream Stability Projects	Prelim & Final Engr	Appraisal/ROW	Construction	
Wetlands		Prelim & Final Engr	Appraisal/ROW	Construction
Flood Control Projects	Prelim. Engr.	Final Engineering	Appraisal/ROW	Construction

Assumptions:

- 1) Sanitary Sewer CIP Construction is directly connected to large scale urbanization of watersheds
- 2) Engineering assumed to be 10% of construction
- 3) On some watershed projects, ROW may already have been obtained from flood corridor preservation

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Watershed Management 12-Year Financing - Assumptions

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1. **Timing of Improvements.** The timing of watershed management (WSM) improvements takes into consideration when improvements need to be in place relative to development, and are described in relationship to (before or after) the construction of the sanitary sewer trunk line. This is based upon the assumption that construction of the sanitary sewer line enables development in the basin. *(See Watershed Basin concept construction schedule).*
2. **Stream Stability Projects.** Stream stability projects are assumed to be constructed in the same year as the sanitary sewer line due to the physical proximity of these projects and the need for stream stability measures to be in place prior to additional stormwater runoff in the basin. Stream stability measures are needed because increased impervious surface areas cause a greater total volume of runoff, which degrades stream channels and impairs water quality.
3. **Wetlands and Detention/Retention Basins.** Wetlands and detention/retention basins are assumed to be constructed the year after construction of the sanitary sewer line. This timing is assumed to insure these improvements are in place prior to substantial development within the basin.
4. **Flood Corridor Preservation.** ROW or easements for flood corridor preservation are assumed to be acquired one year in advance of sanitary sewer construction, in conjunction with ROW acquisition for the sanitary sewer.
5. **Stream Crossing Improvements.** Stream crossing improvements are assumed to be made with road improvements from a rural to an urban section and funded through street construction. These improvements would for the most part be realized simply by meeting drainage design standards for urban streets.
6. **Engineering Costs.** Total engineering costs are assumed to be 10% of construction costs, for both preliminary engineering and final design.
7. **Revenue.** The existing level of funding through the general fund is assumed to continue. The existing level of revenue through GO bonds issued every other year is included as a separate line item to account for the fact that GO bonds must be approved by the voters and there is not guarantee that voters will approve bond issues every other year. While the City is pursuing state enabling legislation for a Stormwater Utility, no revenue from a Stormwater Utility is assumed since the legislation has not passed and if it were to pass, it would still need to be adopted on a local level.
8. **Natural Resources District Funding.** The City of Lincoln works in close partnership with the Lower Platte South Natural Resources District (NRD) on watershed management issues through a standing Interlocal Agreement that is revised annually with a Work Plan. The NRD cost-share for master plan project implementation is assumed to be \$380K per year.

9. **Inflation.** No inflation is assumed.
10. **Operation and Maintenance.** An annual increase in cost of 1.3% is assumed. This is based upon the projected increase in the geographic area of the City within the 12-year planning period.
11. **Existing Urban Area Storm Drain Improvements.** Storm drain improvements in the existing urban area traditionally funded through general obligation bond issues are assumed to be completed at the rate allowed by the current level of funding through GO bonds passed by voters every other year. These improvements are based upon a list of projects identified by a 1966 study (with an update in 1979). At this rate of funding, it is estimated that the City would complete the 1966 list of projects by 2013 (last GO bond issue in 2011).

HOWEVER, the 1966 list is nearly 40 years out-of-date. The City has grown tremendously over this period, and new projects are frequently brought to the City's attention. The GO bond issue for 2003 includes a preliminary engineering project to identify and prioritize storm drainage deficiencies within the existing urban area and is anticipated to substantially revise and lengthen this list.

12. **WSM Improvement Costs.** WSM improvement needs are identified through a watershed master planning process that is conducted basin by basin. Two WSM plans have been completed thus far for the Beal Slough basin and the Southeast Upper Salt Creek (SEUSC) watershed. Master planning will begin shortly for the Stevens Creek basin and the Cardwell branch basins. Where master plans have not yet been completed, costs are estimated based upon the average cost per square mile identified in the Beal Slough and SEUSC basins. Thus, **WSM improvements needed in watersheds not yet master-planned are assumed to cost \$1 million per square mile.**
13. **Federal Water Quality (NPDES) Requirements.** Lincoln has stormwater quality project and program requirements embodied in the NPDES stormwater permit issued to the City by the Nebraska Department of Environmental Quality (NDEQ). These requirements address Federal regulations regarding water quality and embody Phase I and Phase II of the NPDES Stormwater Program. The 12-Year funding identified for WSM does *not* take into account future requirements of a projected third phase to be considered in the 2010 to 2014 time period. At that time, if Lincoln and other communities' Phase II stormwater management programs are evaluated and found not to be effective enough, numeric discharge limitations may be required for Phase III which would be expected to mean significantly greater expense for requirements such as end-of-pipe treatment.

LINCOLN WATERSHED MANAGEMENT DIVISION - CAT5

4/12/03

(in thousands, 2002 dollars)

Item and Description	1 2003-04	2 2004-05	3 2005-06	4 2006-07	5 2007-08	6 2008-09	6 Year Total	7 2009-10	8 2010-11	9 2011-12	10 2012-13	11 2013-14	12 2014-15	12 Year Total
FUNDING														
Operations & Programs (GR)	800	800	800	800	800	800	4,800	800	800	800	800	800	800	9,600
Misc Impr and Studies (GR)	155	155	155	155	155	155	930	155	155	155	155	155	155	1,860
Watershed Master Plan Projects (GR)	100	0	100	0	100	0	300	100	0	100	0	100	0	600
Watershed Master Plan Studies (GR)	240	240	240	240	240	240	1,440	240	240	240	240	240	240	2,880
Stormwater Bond Projects (GO)	3,000	3,000	3,000	3,000	3,000	3,000	18,000	3,000	3,000	3,000	3,000	3,000	3,000	36,000
LPSNRD Cost Share	380	380	380	380	380	380	2,280	380	380	380	380	380	380	4,560
Total Funding	4,675	4,675	4,675	4,675	4,675	4,675	27,750	4,675	4,675	4,675	4,675	4,675	4,675	55,500
Total Funding w/o GO bonds	1,675	1,675	1,675	1,575	1,675	1,575	9,750	1,675	1,575	1,675	1,575	1,675	1,575	19,500
USES														
EXISTING URBAN AREAS														
Stormwater Bond Projects	2,500	2,500	2,500	2,500	2,500	2,500	15,000	2,500	2,500	2,500	2,500	2,500	2,500	30,000
Misc Improvements and Studies	155	155	155	155	155	155	930	155	155	155	155	155	155	1,860
Beal Slough Master Plan Projects	150	830	810	920	1,070	1,600	5,380	30	210	300	0	0	0	5,920
Subtotal	2,805	3,485	3,465	3,575	3,725	4,255	21,310	2,685	2,865	2,955	2,655	2,655	2,655	37,780
NEW GROWTH AREA														
Watershed Master Plans	240	240	240	240	240	240	1,440	240	240	240	240	240	240	2,880
SE Upper Salt Creek Master Plan Projects	5	1,495	2,005	1,045	120	0	4,670	0	0	0	0	0	0	4,670
Tier 1, Priority A Master Plan Projects	1,930	280	0	1,370	6,340	0	9,920	0	2,570	0	0	0	0	12,490
Subtotal	2,175	2,015	2,245	2,655	6,700	240	16,030	240	2,810	240	240	240	240	20,040
OPERATIONS & PROGRAMS	800	810	820	830	840	855	4,955	865	875	885	900	910	920	10,310
Total Uses	5,780	6,310	6,530	7,060	11,265	5,350	42,295	3,790	6,550	4,080	3,795	3,805	3,815	68,130
GAP														
Gap	(1,105)	(1,735)	(1,855)	(2,485)	(6,590)	(775)	(14,545)	885	(1,975)	595	780	870	760	(12,630)
Gap w/o GO Bonds	(4,105)	(4,735)	(4,855)	(5,485)	(9,590)	(3,775)	(32,545)	(2,115)	(4,975)	(2,405)	(2,220)	(2,130)	(2,240)	(48,630)

Assumptions:

- 1) General Fund dollars are tax based and are in competition with other general fund uses.
- 2) General Obligation dollars for bond projects are approved by the voters and subject to change. Past bond issues are being paid off via property taxes at a debt service rate of approximately 8% of the initial bond issue a year for 20 years. Paying off of GO bonds is not accounted for in this spreadsheet. They are paid off through the Finance Division with general funds.
- 3) All dollars are in 2002 dollars and do not account for inflation.
- 4) Approximately 60% of uses are for Existing Urban Areas, 30% for New Growth Areas, and less than ten percent for Operations and Programs.
- 5) Of the existing Master Plan projects approximately 2/3 are connected by timing concerns to development or sanitary sewer improvements, approximately 1/4 are connected by locational concerns to road projects, and the remaining are independent of other projects.
- 6) Annual GO Bond funding was obtained from annualizing the current proposed bond and previous bonds over the past 10 years.
- 7) A Stormwater Utility with a \$3 to \$4.20 fee would bring in 4 to 6M a year.
- 8) Note that of the \$3M/year bond projects, \$2.5M is assumed to be for bond projects in existing urban areas not yet Master Planned, and 0.5M to be used for Master Plan Projects.

Note: See reverse side of sheet for other assumptions.

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CITY OF LINCOLN STORM DRAIN BOND PROJECTS (Previous 10 years and Current)

<u>Year</u>	<u>Project Title and Description</u>
CONSTRUCTED	
1994	\$4,000,000 General Obligation Bond Storm sewer West 2nd and G to 8th and H Antelope Creek Box Rehabilitation, 22nd and N to 20th and Vine Storm sewer 13th and A to 17th and Garfield Storm sewer 9th and F to 16th and D
1996	\$8,250,000 General Obligation Bond Storm sewer west 2nd & G to 8th & H Storm Sewer 13th and A to 17th & Garfield Storm sewer 9th and F to 16th & D Storm sewer 11th and B to 13th and Plum Storm Sewer P St., 23rd to 26th Storm sewer F St., 11th to 16th Storm sewer 11th St., South to A St. Storm sewer 40th St., Sewell to Van Dorn Storm sewer E St., 11th to 17th St. Storm sewer M St., 24th to 26th St. Storm sewer, Woodsdale Blvd., 24th to 27th St. Storm sewer 13th and Garfield to 19th and Prospect Storm sewer W. Rio Road and Eastborough to E. Avon and Vine St.
CURRENT CONSTRUCTION	
2001	\$7,500,000 General Obligation Bond Channel Stabilization, Beal Slough 27th to HWY 2 Storm Drainage 63rd and Orchard to Cotner and Holdrege to 73rd and Aylesworth Ave. Storm Drainage 23rd to 32nd, S to Vine St. Storm Drainage Y and Apple, 28th to 30th St. and Storm sewer 28th and X to 30th and W St. Storm Drainage 9th and Salt Creek to 11th and Avery Ave. Storm Drainage 55th and Vine to Orcutt Ave. and Q St., and 56th St. Mopac Bike Path to 56th and Q Storm Drainage X St. - 19th to 26th St. Storm Drainage West A and Coddington Storm Drainage Sunburst Lane and A to Cotner and Sumner
PROPOSED CONSTRUCTION	
2003	Proposed \$10,000,000 General Obligation Bond Implementation of Basin Plans for Beal Slough and Southeast Upper Salt Creek Basins Dead Man's Run Channel Stabilization Storm Drainage 21st, C to K Storm Drainage, 56th and Holdrege area Storm Drainage 12th, Charleston to Court Miscellaneous Storm Drain Repairs and Rehabilitation Storm Drainage Infrastructure Rehabilitation on Parks Property Storm Drainage 28th and D to 33rd and Randolph Storm Drainage, Sherwood and Somerset to 54th and Cleveland Storm Drainage 66th, Ballard to Burlington Storm Drainage 1st Street, H to F Storm Drainage Vine, 22 to 27 Antelope Creek Projects 39th and Calvert Drainage 21st Street Bypass Preliminary Engineering and Prioritization

Stormwater Utility Overview
Watershed Management 12-Year Financing
April 16, 2003 Finance Work Group Meeting

Overview of Stormwater Utility Concept

- ✓ A stormwater utility is an **enterprise fund** like water or wastewater, in this case supported by service charges to develop, operate and maintain a stormwater system.
- ✓ The user fee is **based on the amount of impervious surface area** of a particular property. Impervious surface area is directly related to a property's contribution to the cost of managing water quality and quantity in the stormwater system.
- ✓ **Funding sources currently used** in Lincoln are General Obligation Bonds for capital improvements and the General Fund for O&M. The current funding method charges the cost to taxpayers through property and sales tax and costs are not distributed in a way that is proportionate to the impacts of each property on the stormwater system.
- ✓ The stormwater utility funds both stormwater management **operating** programs and **capital improvements**.
- ✓ Stormwater projects often take years to complete and require **long-term planning and funding**. A user fee-funded utility can budget programs and projects based on a realistic and dependable revenue stream and well-planned schedule and master plan.
- ✓ Today, **38 states** have enabling legislation for stormwater utilities, and **over 400 stormwater utilities** have been established nationwide.

LB 32 - Proposed Bill for Nebraska State Enabling Legislation

- ✓ There is currently a bill before the Nebraska state legislature with

permissive legislation enabling creation of stormwater utilities at the local level.

- ✓ **LB 32 allows the creation of stormwater utilities for cities or counties subject to NPDES permit requirements, or counties or NRDs encompassing cities with such requirements.**
- ✓ **The bill includes language providing for credits for stormwater 'best management practices' (BMP's) on individual sites that improve water quality or flood control.**
- ✓ **LB 32 is a priority bill of the Natural Resources Committee. It was placed on General File with amendments on March 14, 2003 and has not yet been heard on the floor.**

Annual Cost Comparison Examples, Lincoln, NE

table date: 11/5/02

<u>Property</u>	<u>Taxable Value</u>	<u>Impervious Area, Sq Ft</u>	<u>Property Tax</u>	<u>Stormwater Use Fee \$36.00</u>	<u>Use Fee w/ 33% Credit \$24.00</u>
<i>Residences</i>					
Residential Home	\$100,000	2,200	\$50	\$36	
Multi-Family	\$619,040	14,752	\$312	\$241	
<i>Public Buildings</i>					
State Building	\$0	43,889	\$0	\$718	
Church	\$0	211,276	\$0	\$3,457	
University Building	\$0	305,626	\$0	\$5,001	\$3,334
High School	\$0	508,767	\$0	\$8,325	
<i>Other</i>					
Gas Station	\$254,612	13,759	\$129	\$225	
Restaurant	\$349,907	15,581	\$177	\$255	
Small Car Lot	\$132,924	18,848	\$67	\$308	
High Density Office Bldg	\$7,220,270	23,655	\$3,644	\$387	
Small Grocery Store	\$451,135	38,828	\$228	\$635	
Hotel	\$21,053,373	100,200	\$10,626	\$1,640	
Large Car Lot	\$700,448	157,564	\$354	\$2,578	\$1,719
Large Grocery Store	\$3,616,508	229,858	\$1,825	\$3,761	\$2,508
Industrial	\$4,616,719	529,016	\$2,330	\$8,657	\$5,771
Hospital	\$5,909,818	830,013	\$2,983	\$13,582	\$9,055
Large Shopping Mall	\$34,658,000	1,190,126	\$17,492	\$19,475	\$12,983

Stormwater Use Fee

Equivalent Residential Unit revenue equation ($\$/\text{ERU} \times 8 \times \text{population} = \text{revenue}$)

Assume: ERU = 2,200 square feet, charge per ERU at \$3/month, Lincoln population = 225,000

Then: $\$3/\text{ERU} \times 8 \times 225,000 = \5.4M

Property Tax

2001 Certified Valuation for Lincoln is \$10.7B

Assume: \$5.4 M storm drainage program (see above) funded from property tax

Then: 0.05047% of taxable value used for program